

Marked-up version of claims as amended.

1. In a method for computing and regulating the distribution of linear load in a multi-nip calender in which a material web is passed through the nips, the nips being defined by a set of rolls arranged in a substantially vertical position and including a variable-crown upper roll, a variable-crown lower roll, the variable-crown upper roll and variable-crown lower roll being structured and arranged to selectively apply a load to [and] at least two intermediate rolls arranged between the upper roll and the lower roll, said at least two intermediate rolls being provided with support cylinders, all of the rolls in the set of rolls being supported such that, when in nip-defining relationship, the rolls have bending lines which are curved downward, the improvement comprising the steps of:

assigning a value to at least one variable representing a physical property affecting the bending of each of said at least two intermediate rolls, and

regulating at least one of a ratio of [the] linear loads applied to said at least two intermediate rolls, the weight of said at least two intermediate rolls, and support forces applied to said at least two intermediate rolls such that the set of rolls is in a state of equilibrium and a predetermined state of deflection.

2. The method of claim 1, wherein step of assigning a value to at least variable representing a [one] physical property affecting the bending of each of said at least two intermediate rolls comprises the step of assigning a value to the bending rigidity, mass, shape, and material of each of said at least two intermediate rolls.

11. In an arrangement for computing and regulating the distribution of linear load in a multi-nip calender in which a material web is passed through the nips, the nips being defined by a set of rolls arranged in a substantially vertical position and including a variable-crown upper roll, a variable-crown lower roll, the variable-crown upper roll and variable-crown lower roll being structured and arranged to selectively apply a load to [and] at least two intermediate rolls arranged between the upper roll and the lower roll, said at least two intermediate rolls being provided with support cylinders, all of the rolls in the set of rolls being supported such that, when in nip-defining relationship, the rolls have bending lines which are curved downward, the improvement comprising:

an automation system and a computing unit for assigning at least one value to a variable representing a physical property affecting the bending of each of said at least two intermediate rolls and for regulating at least one of a ratio of [the] linear loads applied to said at least two intermediate rolls, the weight of said at least two intermediate rolls, and support forces applied to said at least two intermediate rolls such that the set of rolls is in a state of equilibrium and a predetermined state of deflection.

REMARKS

Reconsideration of the present application, as amended, is respectfully requested.

STATUS OF THE CLAIMS

Claims 1-6, 8-13 and 15-16 are pending claims 1, 2, 11 having been amended herein.

REJECTION UNDER 35 U.S.C. §112, SECOND PARAGRAPH

Claims 1-6, 8-13, 15 and 16 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Claims 1, 2, 11 have been amended herein to more clearly recite the invention. In view of the amendments to the claims it is submitted that the Examiner's rejections under 35 U.S.C. §112, second paragraph have been overcome.

REJECTIONS UNDER 35 U.S.C. §102(b) AND 35 U.S.C. §103(a)

Claims 1-6, 8, 11-13, 15 and 16, were rejected under 35 U.S.C. §102(b) as being anticipated by Schiel (5,226,357). Claims 9-10 were rejected under 35 U.S.C. §103(a) as being obvious over Schiel in view of Koivukunnas et al. (5,438,920). The Examiner's rejections are respectfully traversed.

U.S. Patent 5,226,357 ("the '357 reference") discloses a multi-roll calender, in which a sag-compensation roll is used as *the bottom roll of the calender only* (column 5, lines 5-7). The sag-compensation roll is of the type in which a sag thereof is compensated by an internal pressure, i.e there is a pressurized chamber in the roll. Conversely the arrangement to which the present invention is directed includes "a variable-crown upper roll, a variable-crown lower roll, the variable-crown upper roll and variable-crown lower roll being structured and arranged to selectively apply a load to at least two intermediate rolls". In addition the method according to the present invention includes the step of "*regulating at least one of a ratio of linear loads applied to said at least two intermediate rolls*, the weight of said at least two intermediate rolls, and support forces applied to said at least two intermediate rolls such that the set of rolls is in a state of equilibrium and a predetermined state of deflection" (emphasis added). It is submitted that '357 reference does not disclose "a variable-crown upper roll, a variable-crown lower roll, the variable-crown upper roll and variable-crown lower roll being structured and arranged to selectively apply a load" in the manner of the claimed invention. Further it is submitted that the '357 reference does not disclose regulating "at least one of a ratio of linear loads ..." in the manner of the claimed invention but rather discloses a multi-roll calender, in which a sag-compensation roll is used as *the bottom roll of the calender only*.

In view of the above it is submitted that the '357 reference fails to anticipate the claimed invention. Further it is submitted that the teachings fo Koivukunnas et al. cannot be combined with the teachings of the '357 reference to thereby render the claimed invention obvious.

CONCLUSION

It is respectfully submitted, that in view of the amendments made to the claims and in view of the arguments presented above, that the Examiners's rejection of the claims have been overcome and should be withdrawn.

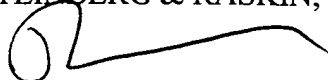
A petition for a three-month extension of time is submitted herewith along with a petition fee. A Notice of Appeal and appropriate fee are also enclosed. If it is determined that any additional fee is required for the entry of this amendment, the U.S. Patent and Trademark Office is specifically authorized to charge such fee to Deposit Account No. 50-0518 in the name of Steinberg & Raskin, P.C.

According to currently recommended Patent Office policy, the Examiner is specifically authorized to contact the undersigned in the event that a telephonic interview would advance the prosecution of this application.

An early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

STEINBERG & RASKIN, P.C.



Paul J. Higgins
Reg. No. 44,152

Steinberg & Raskin, P.C.
1140 Avenue of the Americas
New York, New York 10036
(212) 768-3800

Encls.

- Petition for three-month extension;
- Notice of appeal, and fee.